

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for executing a common task in a clustered computing environment comprising a plurality of computers interconnected to collaborate on said common task, said plurality of computers including at least a client computer and a shared storage medium storing data elements, said shared storage medium maintaining a main list of data version information associated with said data elements, said method comprising:

said client computer maintaining a locally-stored list containing previously retrieved data elements associated with their data version;

said client computer reading, from said locally-stored list, a data version associated with said data element, and sending a request over a data network including said data version to said shared medium;

matching said data version received from said client computer with said data version associated with said data element from said main list on said shared storage medium, said matching comprising one of:

~~if said data version received from said client computer does not match said main list data version associated with said data element, said shared storage medium sending to said client computer a new copy of said data element and a new data version~~ when said data version received from said client computer is one of non-identical to said main list data version associated with said data element and identical to a null-value data version, and said client computer updating said locally-stored list with said new copy of said data element and said new data version; and

~~if said data version received from said client computer matches said main list data version associated with said data element, said shared storage medium sending to said client computer confirmation that said locally-stored data element associated with said data version is valid~~ when

said data version received from said client computer is identical to said main list data version associated with said data element;

after said matching, at least one of said plurality of computers modifying said data element stored on said shared storage medium and said client computer using said retrieved data element to execute said common task;

whereby transfer of copies of data elements between said shared storage medium and said plurality of computers is reduced and an amount of network load needed to retrieve data elements from said shared storage medium is reduced.

2. (currently amended) The method as claimed in claim 1, wherein said client sending said data version to said shared medium comprises sending ~~a~~ the null-value data version in the case in which said data element is not stored in said client memory and said shared medium replying to said client with a copy of said data element and data version.

3. (original) The method as claimed in claim 1, wherein said request for said data element contains an address range defining said data element on said shared medium.

4. (original) The method as claimed in claim 3, wherein said address range comprises non-contiguous storage blocks.

5. (original) The method as claimed in claim 1, wherein said client computer communicates with said shared medium through a network block device driver.

6. (original) The method as claimed in claim 1, wherein said shared medium is a server memory storage space.

7. (currently amended) A method for maintaining a main list of data version information associated with data elements on a shared medium, said data version information being used for data retrieval, comprising:

creating a list of data structures identifying data elements on said shared medium and said data version information;

receiving a request from a client computer, on a data network, for writing at least one of said data elements;

matching said data version associated with said at least one data element from a locally-stored list on said client computer with said data version associated with said at least one data element from said main list on said shared storage medium, said matching comprising one of:

sending to said client computer a new copy of said at least one data element and a new data version when said data version from said locally-stored list is one non-identical to said main list data version associated with said at least one data element and identical to a null-value data version, and

sending to said client computer a confirmation that said locally-stored at least one data element associated with said data version is valid when said data version from said locally-stored list is identical to said data version associated with said at least one data element from said main list; and

after said matching, following modification to said at least one of said data elements, giving a new data version to said at least one of said data elements that was modified.

8. (original) The method as claimed in claim 7, wherein if said data elements being modified are associated with multiple separate data structures containing data version information, creating a new single data structure in said list associated with said data elements modified and removing said multiple separate data structures from said list.

9. (original) The method as claimed in claim 7, wherein said initial version state is an initial version number and wherein said initial version number is incremented to obtain said new version state.

10. (original) The method as claimed in claim 7, wherein said list of data structures is a double linked binary tree list.

11. (currently amended) A method for managing data version information associated with data elements on a shared storage medium in a clustered computing environment, said data

version information being used for data retrieval by a plurality of computers interconnected in said clustered computing environment, comprising:

creating a list of data structures identifying data elements on said shared storage medium and said data version information;

receiving a request on a data network from at least one of said plurality of computers for writing at least one of said data elements;

matching said data version associated with said at least one data element from a locally-stored list on said at least one computer with said data version associated with said at least one data element from said main list on said shared storage medium, said matching comprising one of:

sending to said at least one computer a new copy of said at least one data element and a new data version when said data version from said locally-stored list is one non-identical to said main list data version associated with said at least one data element and identical to a null-value data version, and

sending to said at least one computer a confirmation that said locally-stored at least one data element associated with said data version is valid when said data version from said locally-stored list is identical to said data version associated with said at least one data element from said main list; and

after said matching, following modification to said at least one of said data elements, giving a new data version to said at least one of said data elements that was modified.

12. (previously presented) The method as claimed in claim 11, wherein if said data elements being modified are associated with multiple separate data structures containing data version information, creating a new single data structure in said list associated with said data elements modified and removing said multiple separate data structures from said list.

13. (previously presented) The method as claimed in claim 11, wherein said initial version state is an initial version number and wherein said initial version number is incremented to obtain said new version state.

14. (previously presented) The method as claimed in claim 11, wherein said list of data structures is a double linked binary tree list.

15. (new) A method for maintaining a main list of data version information associated with data elements on a shared medium, said data version information being used for data retrieval, comprising:

creating a list of data structures identifying data elements on said shared medium and said data version information;

receiving a request on a data network for writing at least one of said data elements;

ensuring a consistency between said data version associated with said at least one data element from a locally-stored list on a client computer with said data version associated with said at least one data element from said main list, said ensuring comprising updating said locally-stored list with said data version and said data element from said main list when said data version from said locally-stored list is one of: non-identical to said data version from said main list and identical to a null-value data;

after said ensuring of said consistency, completing said request for writing to said at least one element, giving a new data version to said at least one data element that is modified.